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Phase One Cultural Resource Survey

ILLINOIS POWER VALMEYER LINE VALMEYER, ILLINOIS

April 7, 2003

Prepared For:

Illinois Power Company

Prepared By:

Steve J. Dasovich
And
Leonard C. Ott

SCI No. 2002-1212.40

Results of Investigation and Recommendations: (Check One)

☐ Phase I Archaeological Reconnaissance Has Located No Archaeological Material; Project Clearance Is Recommended.

X Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) Does (Do) Not Meet Requirements For National Register Eligibility; Project Clearance Is Recommended.

☐ Phase I Archaeological Reconnaissance Has Located Archaeological Materials; Site(s) May Meet Requirements for National Register Eligibility; Phase II Testing Is Recommended.

☐ Phase II Archaeological Investigation Has Indicated That Site(s) Does (Do) Not Meet Requirements For National Register Eligibility; Project Clearance Is Recommended.

☐ Phase II Archaeological Investigation Has Indicated That Site(s) Meet Requirements For National Register Eligibility; Formal Report is Pending And A Determination of Eligibility Is Recommended.

Comments: :

See Page 3

Archaeological Contractor Information

Archaeological Contractor: SCI Engineering, Inc.

Address/Phone: 130 Point West Boulevard, St. Charles, Missouri 63301

(636) 949-8200

Surveyor(s): Leonard C. Ott , Kathryn A. Drennan, Tracy Knerrer Survey Date(s): December 10 and 18, 2002

Report Completed By: Leonard C. Ott, Kathryn A. Drennan, and Steve J. Dasovich Date: April 7, 2003

Submitted By (Signature and Title): Steve J. Dasovich (Head, Archaeological Services)

Attachment Check List: (#1 Through #4 Are MANDATORY)

X 1) Relevant Portion of USGS 7.5' Topographic Quadrangle Map(s) Showing Project Location And Any Recorded Sites;

X 2) Project Map(s) Depicting Survey Limits And, When Applicable, Approximate Site Limits, And Concentrations Of Cultural Materials;

X 3) Site Form(s): Two Copies of Each Form;

____ 4) All Relevant Project Correspondence;

X 5) Additional Information Sheets As Necessary.

Address Of Owner/Agent/Agency To Whom SHPO Comment Should Be Mailed:

Steve J. Dasovich
SCI Engineering, Inc.
130 Point West Boulevard
St. Charles, Missouri 63301

William G. Badger
Illinois Power Company
500 South 27th Street , PO Box 366
Decatur, Illinois 62521

Contact Person: Steve J. Dasovich Phone Number: (636) 949-8200

Review Comments:

Legal Location: The project area lies in the south half of Sections 2 and 3, in the north half of the north half of the NW ¼ of Section 9, the SE ¼, SE ¼, SW ¼, and the south half of SE ¼ of Section 4, and in a land grant of Township 3 South, Range 11 West of Monroe County, Illinois.

Comments:

SCI surveyed approximately 3.2 miles for a utility pole right-of-way in and near the town of Valmeyer. This corridor is for above-ground poles with varying distances between each pole. Due to constraints in having the corridor properly staked, the fieldwork stretched from December, 2002 to March, 2003 due to adverse weather conditions. The corridor width varies from approximately 60 feet to approximately 20 feet wide. The corridor traverses varied terrain. Roughly the eastern half traverses through both open agricultural fields in the Mississippi River floodplain and through the northern remnants of old Valmeyer, which was mostly destroyed or abandoned during and after the flooding of 1993 and 1994. The western half traverses through often precipitous terrain (mostly on extreme slopes), up the bluffs and over steeply cut areas north of Dennis Hollow, then out onto more level, agricultural uplands. On much of the upland, the corridor is approximately 50 feet south of an existing transmission line. This distance separating the two corridors puts this new corridor often down on the slope of the finger ridges, therefore missing many of the previously recorded sites along the ridgeline. This is explained in more detail below.

SCI conducted a pedestrian survey of the narrow corridor while in the bottoms. The crew did not locate any cultural materials. Along the bluff and finger ridges, the crew utilized both pedestrian walkover and screened shovel tests, depending upon visibility and depth of bedrock. Approximately 70% of the thin finger ridges had bedrock depths that precluded shovel testing. Approximately 25% allowed for pedestrian survey. Upon reaching more level ground on the extreme east portion of the project area, SCI excavated screened shovel testing. The crew did not locate any cultural materials on any of the uplands.

Portions of the project corridor in the uplands include previously surveyed areas as described in document numbers 3096 and 5811. The project corridor touches site 11MO476 and may touch three other previously recorded sites, 11MO477, 479, and 480. Site 476 is recorded as the St. John's Cemetery mound, originally recorded as a possible mound (called a mound/knoll on the site form) in 1974. A revisit in 1980 supposedly relocated this mound. The 1980 revisit site form states "The mound is still substantially intact, but is being eroded by an intermittent stream". This description has caused some doubt as to exactly what mound this is describing. SCI believes it located the original St. John's Cemetery mound high up on a very thin finger ridge. But, no streams exist on such terrain. The field crew noted no evidence of stream driven erosion. The 1980 revisit goes on to say that limestone slabs were exposed in the mound and that a tip of a large blade was also located on the mound. At the times of SCI's two visits to the hummock area, visibility was approximately 35% in the immediate vicinity of the mound/knoll due to leaf litter. Natural outcroppings of limestone well below the level of the mound are the only limestone visible in the vicinity of the hummock. Shovel testing on the other portions of the finger ridge, and examination of the bare areas did not locate any cultural materials. The hummock had a significant "looters" hole on the south side. This previous excavation had taken approximately 25% of the hummock away. The hummock is located on the west end of the finger ridge, away from the Mississippi River valley. In fact, the valley is not readily visible from the mound location. Dr. Ed Hajic and Dr. Steve Dasovich closely examined the hummock to determine if it was cultural. Utilizing the exposed interior of the mound (approximately 1 meter deep from the summit) inside the large hole, they determined that this hummock appears to not be a mound. No evidence of "construction" was noted in the profile. Typical layering of individual loads of dirt and any evidence of cultural activity were not present (See appendix A).

Site 477, a mound/knoll, was recorded in 1974 and was called the Dennis Hollow Mound. The 1974 surveyor did not locate any cultural materials. SCI may have relocated this mound/knoll. A large, approximately 3 meter high remnant of a hummock lies on the southern edge of the finger ridge in the area of site 477. SCI estimates that the hummock was oval in shape, and approximately 25 by 10 meters at the base. However, at least half is now gone, having been cut into by heavy equipment. This exposed the entire interior of the hummock for viewing. Strong soil development is visible, indicating that this is a natural formation and not a mound (See appendix A). If this remnant geologic feature is site 477, then it appears that this site is not cultural. However, it could also be that this is not site 477. Because of the supposed original size of the hummock, SCI does not believe that this is site 477. All portions of the project area located on the tops of the finger ridges north of Dennis Hollow, appeared to have been bulldozed sometime in the past for easier access for logging. City of Valmeyer officials explained that almost the entire ridge line has been logged within the past 30 or so years. SCI searched for push piles along the ridge sides, but did not locate any. SCI did not locate any cultural materials in this vicinity.

Site 479, a "camp?", was recorded in 1974 in an agricultural field. The location of this site, as recorded by the Illinois State Museum, would mean this cornfield in 1974 was extremely small, so small in fact, that harvesting would be a difficult proposition. The entire ridge line is now grass covered and is not more then 40-50 feet wide in this area. SCI excavated screened shovel probes along this area of the ridge but did not locate any cultural materials. The original survey located 5 debitage, 1 modified, and 1 hammerstone fragment. Many of the areas along this ridge yield copious amounts of natural cherts. With plowing possible at the time of the field being utilized agriculturally, it is possible that this site encountered some of these. In 1993, this site was apparently linked to site 480. SCI believes that site 479 may be located further to the north than indicated by the Illinois State Museum map.

Site 480 is a larger lithic scatter, updated in 1993 during the relocation survey. One hundred and eleven pieces of lithics were located then. SCI did not locate any cultural materials in screened shovel tests in the vicinity of this site. SCI believes that this site is significantly to the north of this project area. Its connection to site 479 as recorded in 1993 by Burns and Wells on their site form, is not well described, and without any artifactual evidence from the current survey, SCI can not comment on the inter-relations of these two sites.

The current project corridor runs to the south, and often down the slope from the previous utility and relocation surveys conducted on the same ridgeline. Project stakes are often on significant slopes. SCI walked these slopes, but did not locate any cultural material that may have been relocated by washing episodes. SCI excavated the shovel probes along the extreme south edge of the ridge, but not outside the project limits towards the existing utility corridor. Therefore, SCI believes that these sites were not relocated because the vast majority of the current project area is south of these sites and that the Illinois State Museum map of these sites simply has the sites slightly too large, including landforms rather than actual artifact distribution.

Otherwise, the project corridor also passes near the following sites: 11MO218, 555, 559, 560, and 561. SCI did not locate any cultural materials in the vicinity of these sites. SCI did not attempt to relocate any of these previously recorded sites. According the site map provided by the Illinois State Museum, the survey corridor appears to be placed south of site 555, and north of sites 559, 560, and 561.

SCI noted one other mound-like feature in the project corridor. This large oval-plan mound of soil is in the floodplain immediately southwest of the dam for the Moredock Lake (Marystown Creek). Because it does not appear to be of prehistoric origin, under the direction of Dr. Ed Hajic, SCI excavated a profile down the south side of this landform, in an area previously cut by heavy machinery, to verify this hypothesis. The profile was not typical of a prehistoric mound. The bottom half of the profile exhibited some layering, but it is likely that this is from dumping episodes associated with the construction of the dam. Officials with the city of Valmeyer believe that this mound of soil is associated with construction of the significant drainage ditch immediately adjacent to the

hummock. Finally, this landform does not appear on the current topographical map. SCI did not record this as a site. It is also interesting to note that with the other surveys by advocational archaeologists in the area, that this was never recorded as a mound site. Several possible artifacts were collected in the vicinity of this landform. However, upon laboratory analysis, SCI determined that these lithic pieces were not cultural.

Recommendation:

SCI did not locate any cultural materials over 50 years in age during the survey. SCI conducted geomorphological testing in previously disturbed areas of the three hummocks encountered during the survey. The field crews did not locate any evidence of cultural activity associated with them. While many archaeological sites are in the vicinity of the project area, SCI believes that for the non-hummock/mound sites, the project corridor lies significantly to the south, and often down the ridge, of these sites. Little ground disturbance will result from the project activities as utility poles only are proposed. Therefore, SCI recommends that the project proceed as planned.

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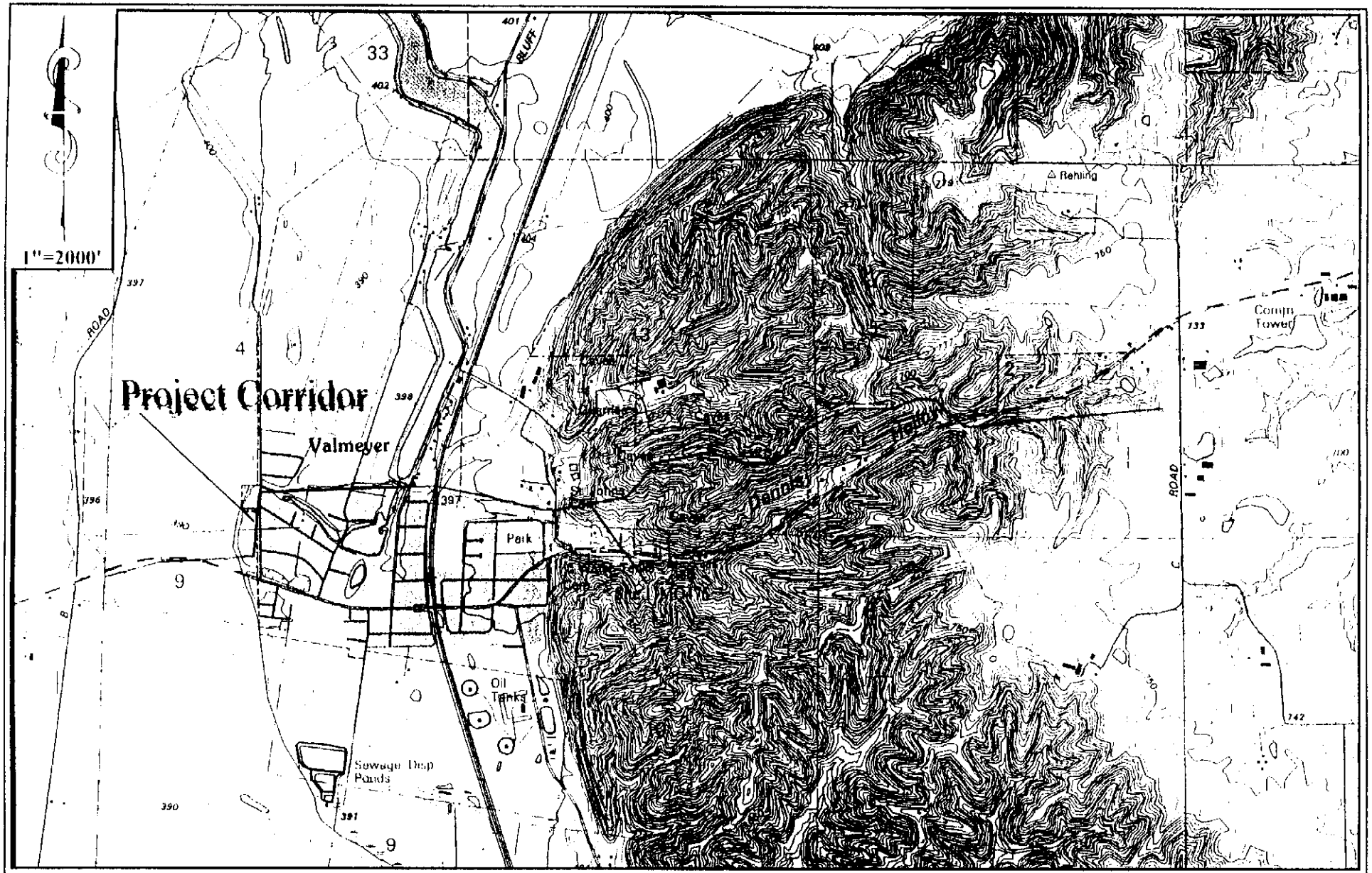

FIGURE 1

REFERENCE
USGS TOPOGRAPHIC MAP
VALMEYER, ILLINOIS-MISSOURI QUADRANGLE
DATED 1993

10' CONTOUR INTERVALS

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ILLINOIS POWER - VALMEYER LINE
Monroe County, Illinois

PROJECT AREA MAP

APRIL 2003 SCI NO. 2002-1212.40

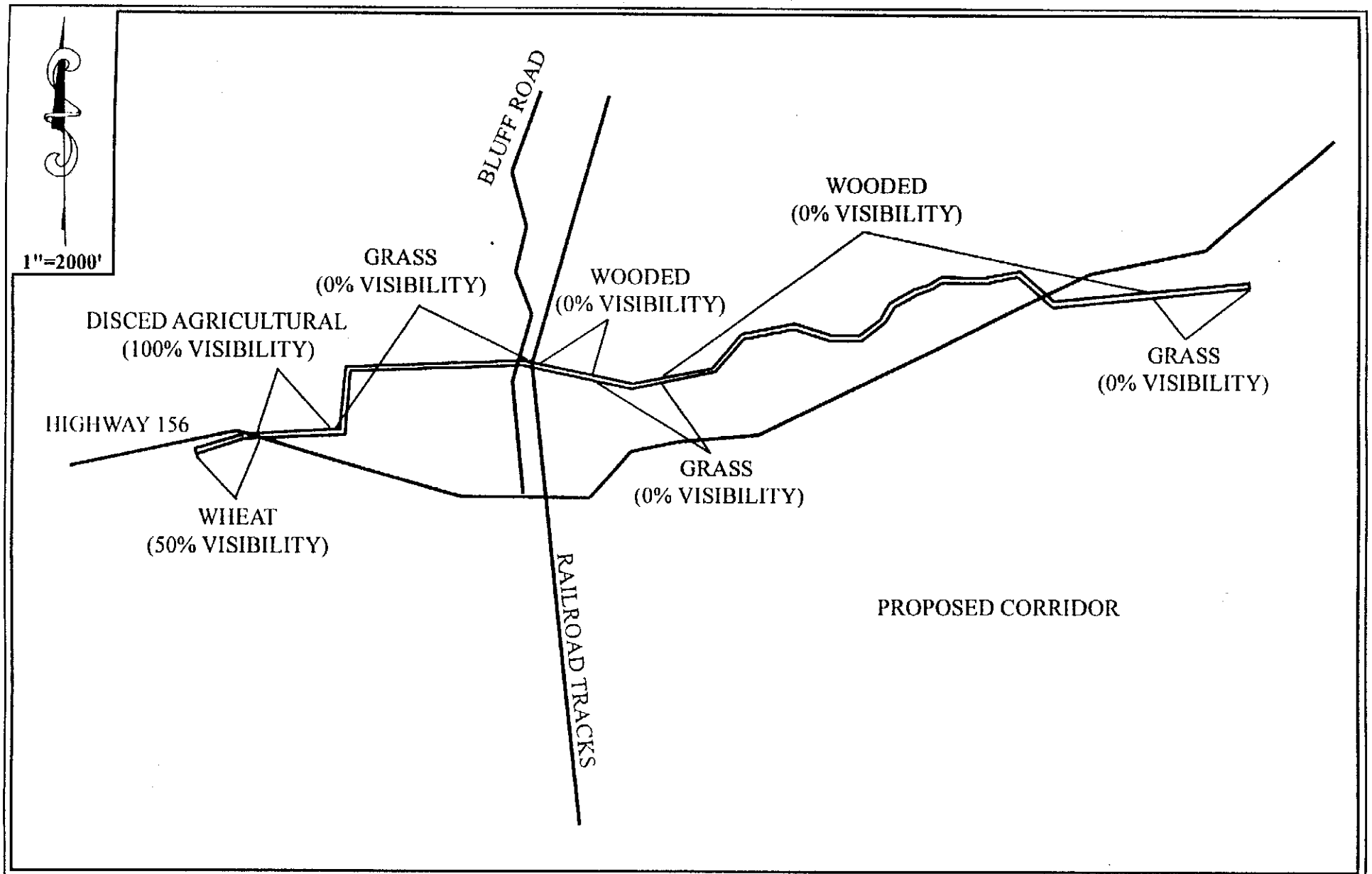

FIGURE 2

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ILLINOIS POWER - VALMEYER LINE
Monroe County, Illinois

SKETCH MAP

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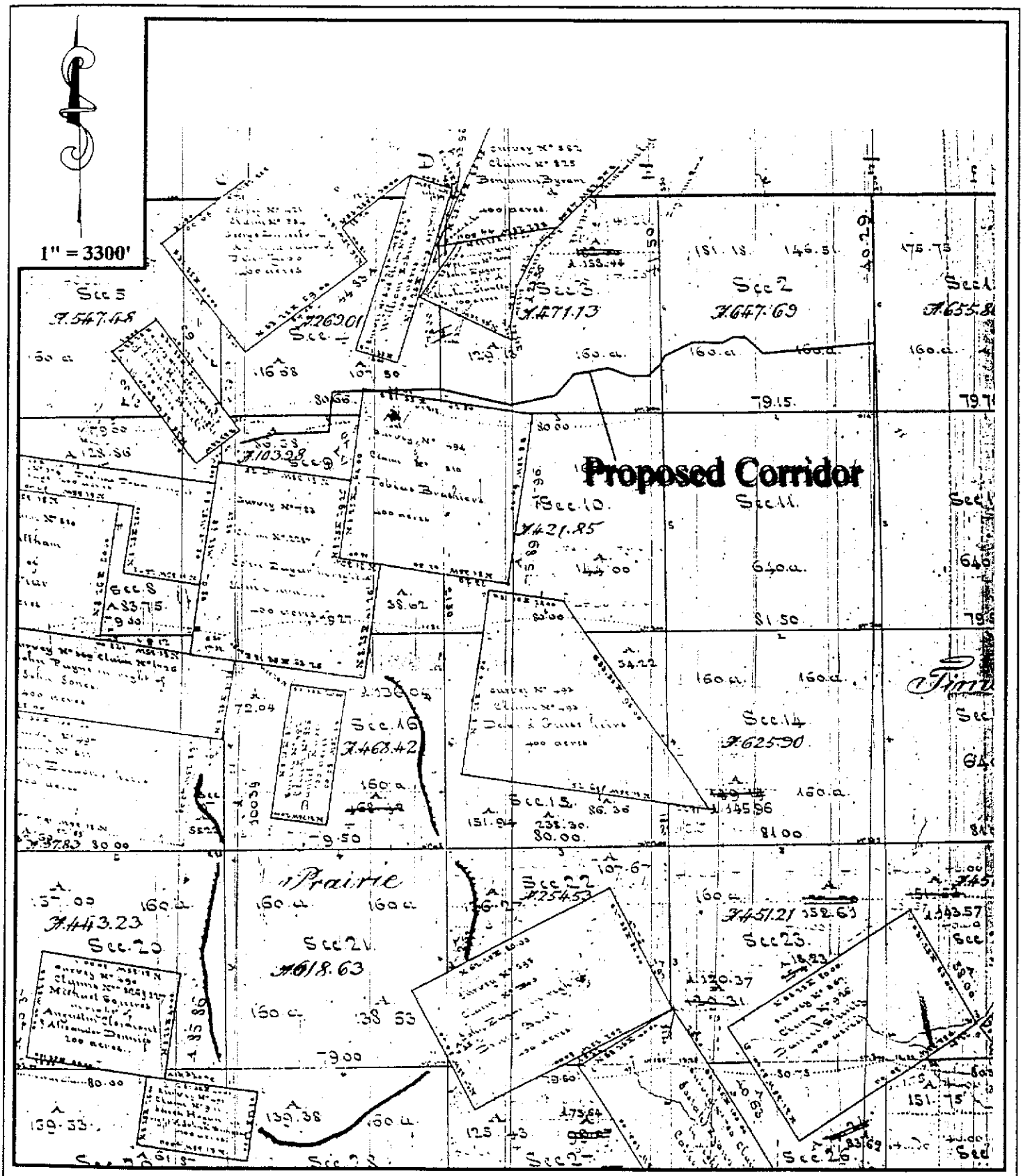

FIGURE 3

REFERENCE
GOVERNMENT LAND OFFICE MAP

DATED 1813

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ILLINOIS POWER - VALMEYER LINE	Monroe County, Illinois
1813 GLO MAP	
APRIL 2003	SCI NO. 2002-1212.40

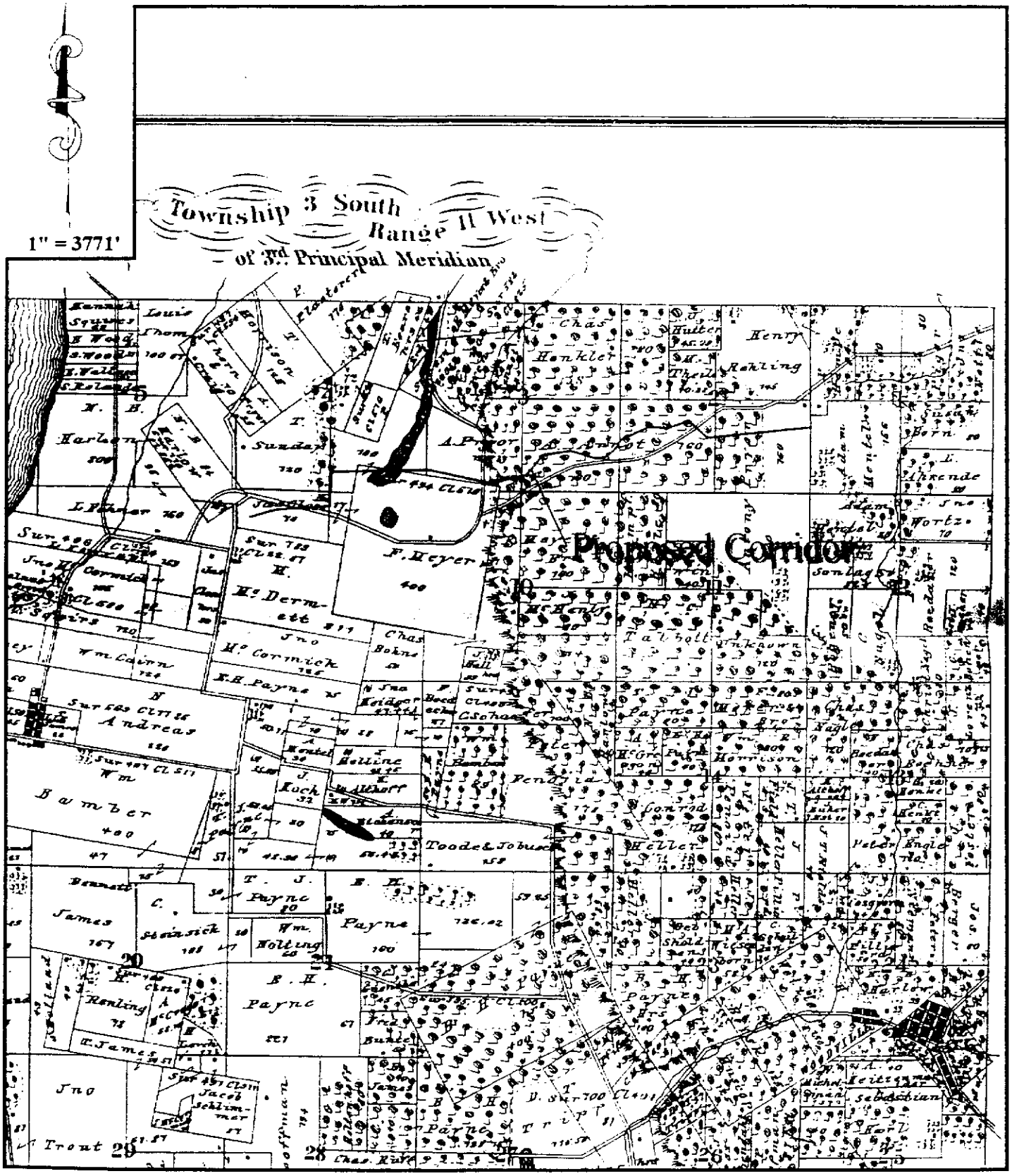

FIGURE 4

REFERENCE
AN ILLUSTRATED HISTORICAL ATLAS MAP
OF MONROE COUNTY, ILLINOIS
PUBLISHED BY W.R. BRINK & CO. OF ILLINOIS

DATED 1875

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ILLINOIS POWER - VALMEYER LINE
Monroe County, Illinois

1875 W.R. BRINK & CO. ATLAS

APRIL 2003 SCI NO. 2002-1212.40

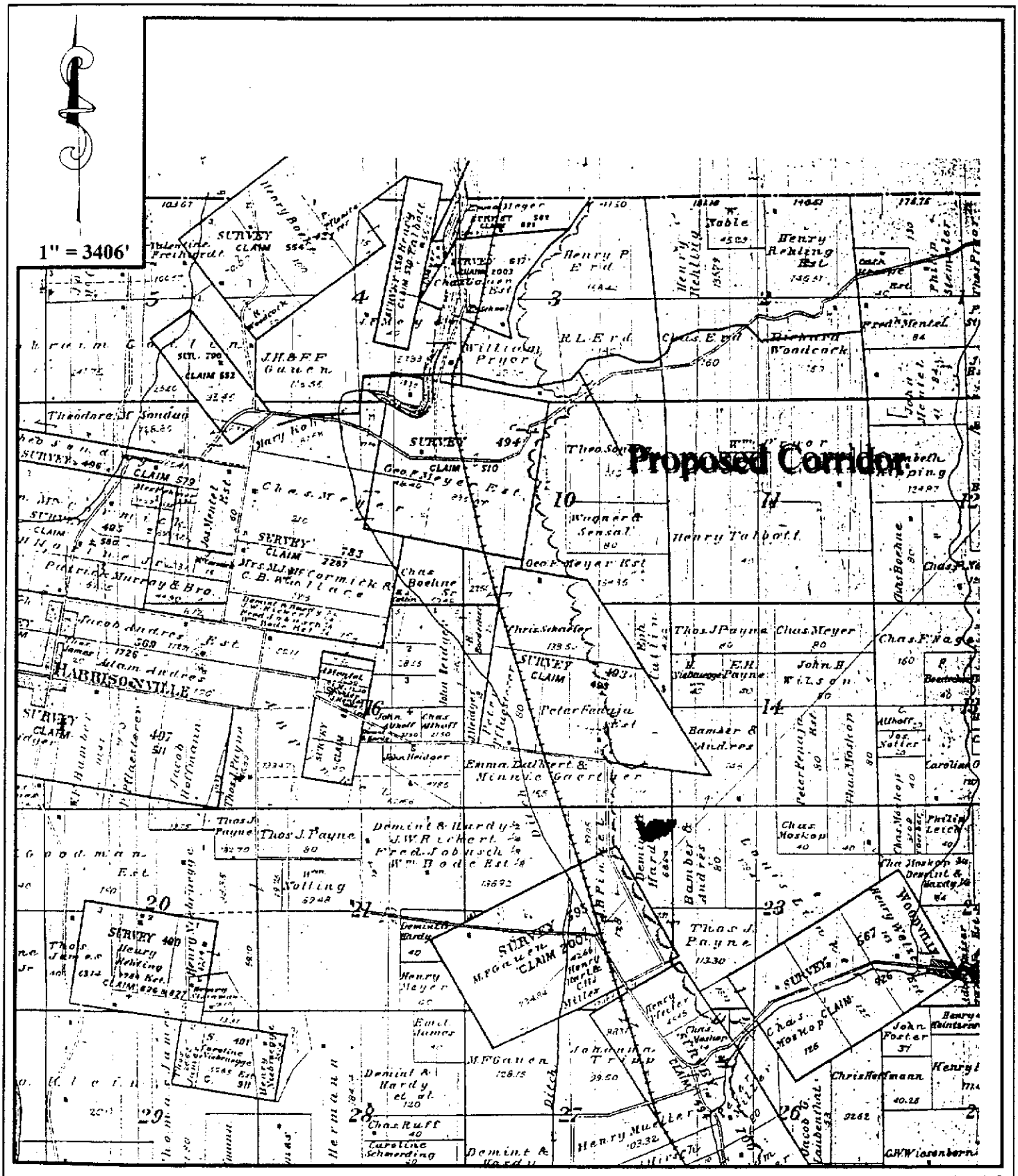

FIGURE 5

REFERENCE
STANDARD ATLAS OF MONROE COUNTY, ILLINOIS
PUBLISHED BY GEORGE A. OGLE & COMPANY
CHICAGO, ILLINOIS

DATED 1901

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ILLINOIS POWER - VALMEYER LINE
Monroe County, Illinois

1901 OGLE & COMPANY ATLAS

APRIL 2003 SCI NO. 2002-1212.40

NOT TO SCALE

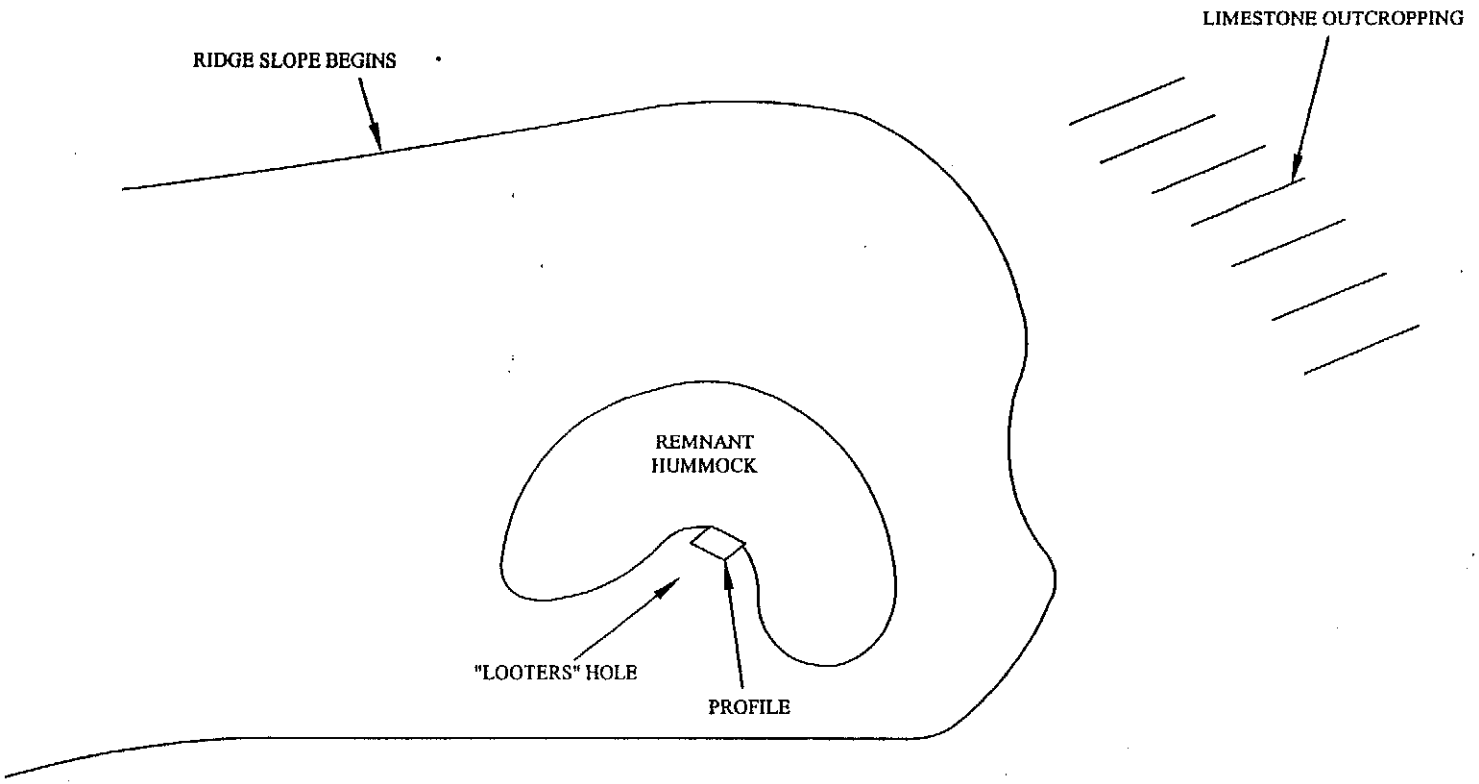

FIGURE 6

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ILLINOIS POWER - VALMEYER LINE
Monroe County, Illinois

SKETCH MAP - 11MO476 SITE REVISIT

APRIL 2003 SCI NO. 2002-1212.40

ARCHAEOLOGICAL GEOLOGY ALONG A PROPOSED TRANSMISSION LINE IN THE AMERICAN BOTTOMS

By

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Prepared For

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St. Charles, MO 63301

1 April 2003

LIST OF FIGURES

LIST OF APPENDICES

ARCHAEOLOGICAL GEOLOGY ALONG A PROPOSED TRANSMISSION LINE IN THE AMERICAN BOTTOMS

Edwin R. Hajic

INTRODUCTION

Background

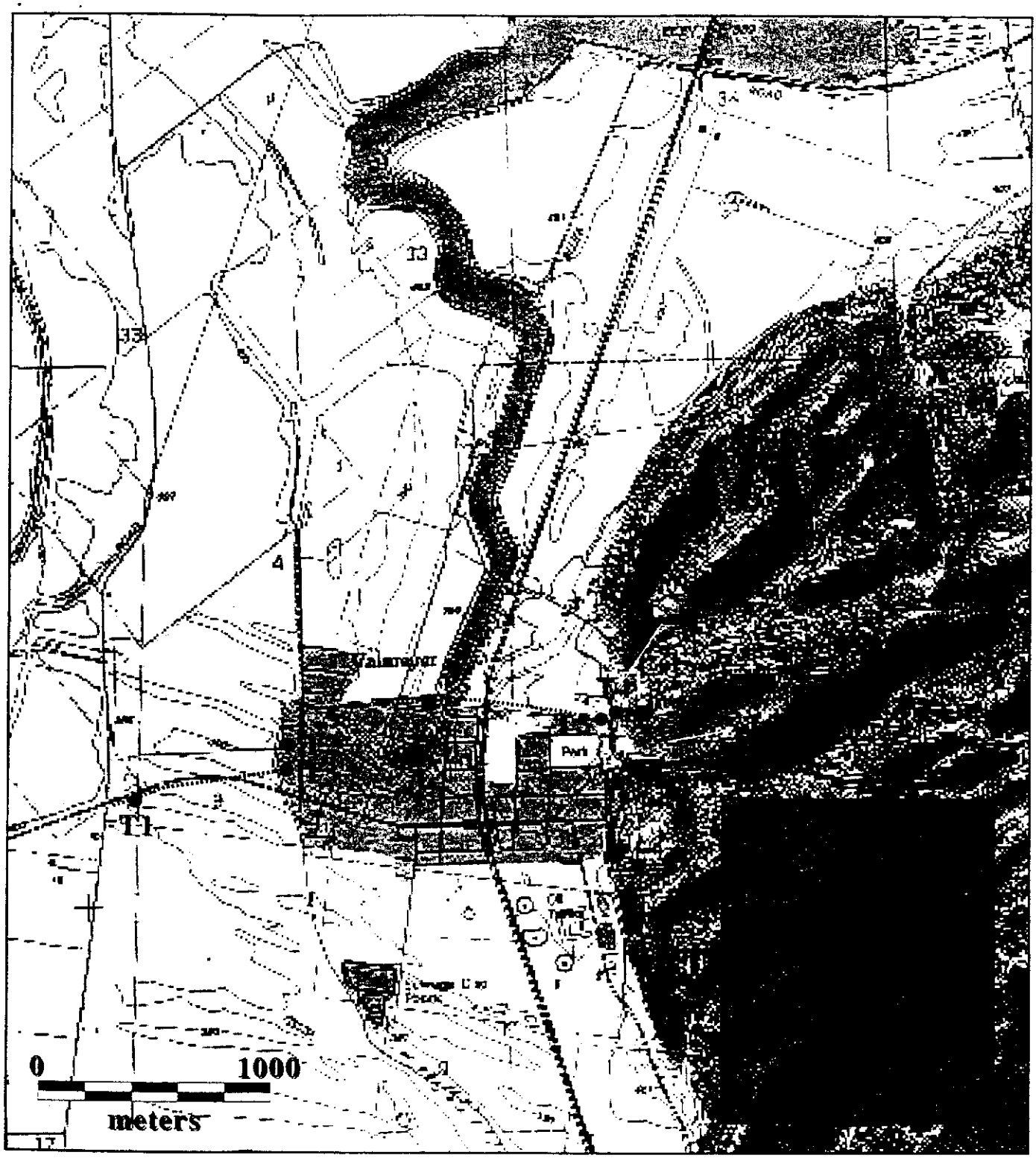
A power transmission line is being proposed for a rural area south-southeast of St. Louis. The line runs roughly west to east, crossing part of the Mississippi Valley, through the old town of Valmeyer, Illinois, and into the adjacent dissected uplands. There is concern about the possibility of encountering buried prehistoric cultural deposits in the Mississippi Valley where holes will be drilled for the powerline poles. The purpose of this report is to evaluate the geomorphic, stratigraphic and sedimentologic context of the power transmission line as a basis for assessing the potential for encountering buried prehistoric cultural deposits.

Geologic Setting

The project area is located in the eastern third of a reach of the American Bottoms of the Mississippi Valley. The project area includes the old village of Valmeyer, Illinois, is situated south-southeast of St. Louis, and lies across the valley from Pevely, Missouri (Figure 1). The proposed transmission line begins at B Road on the west. From there it follows Route 156 eastward, until it crosses north of Route 156. After crossing a ditched Marystown Creek, it angles north, running parallel to and west of West Road. Just before Lee (street), it turns eastward to follow another reach of Marystown Creek. After crossing Route 3, it more or less follows the canalized creek that emanates from Dennis Hollow. It diverges from the creek at Bluff Road and ascends into the dissected uplands.

Dissected valley bluffs range up to about 90 m high, and are cut in Mississippian limestones overlain by Pennsylvanian shale, sandstone and coal. Caves are common on dissected upland side slopes, and a quarry is present north of the proposed transmission line and Valmeyer. Bedrock in the uplands is mantled by a thick accumulation of Wisconsin loesses (McKay 1977). The loess serves as a major sediment source for tributary creeks that drain the uplands. Silt-dominated alluvial fans and colluvial slope deposits of Holocene age are common along the margins of this reach of the Mississippi Valley.

The Mississippi River flows along the western side of the American Bottoms, about 3.5 km from the western end of the project. The floodplain consists of several abandoned Mississippi River channel belts (Hajic, 1992). The project area is limited to one of these paleochannel belts. The belt is characterized by cutoff meanders and related point bar ridges and swales associated with a large sinuosity, large amplitude paleomeander belt of the Mississippi River (Munson 1971; Smith and Smith 1984; Bareis and Porter 1984; Hajic 1992; 1993; Hajic et al. 2000). The



transmission line route

observations of hummock questioned as a mound

trench location

Figure 1. Project area location in the American Bottoms and trench locations.

paleomeander belt is inset below Late Wisconsin loess-mantled terrace remnants preserved in the mouths of tributary valleys (Hajic, 1991).

Methods

A geomorphic map of that part of the project vicinity in the valley was prepared. Mapping was accomplished utilizing high altitude color infrared aerial photography (NHAP 175-174 and 175-176, 3-18-85) and the U.S.G.S. 7.5' topographic map (Valmeyer quadrangle). The photograph was scanned, orthorectified, georeferenced, and entered into a GIS system along with the digital raster graphic of the Valmeyer quadrangle map. Geomorphic mapping was then conducted directly onscreen into the GIS using "heads-up" digitizing techniques. Geomorphic surfaces were mapped based on a synthesis of tonal contrasts on the aerial photograph, cross-cutting geomorphic relationships, and topography. Surfaces are interpreted with reference to previous high-resolution geoarchaeological and geomorphologic investigations in the American Bottom (Hajic 1993, Hajic et al. 2000).

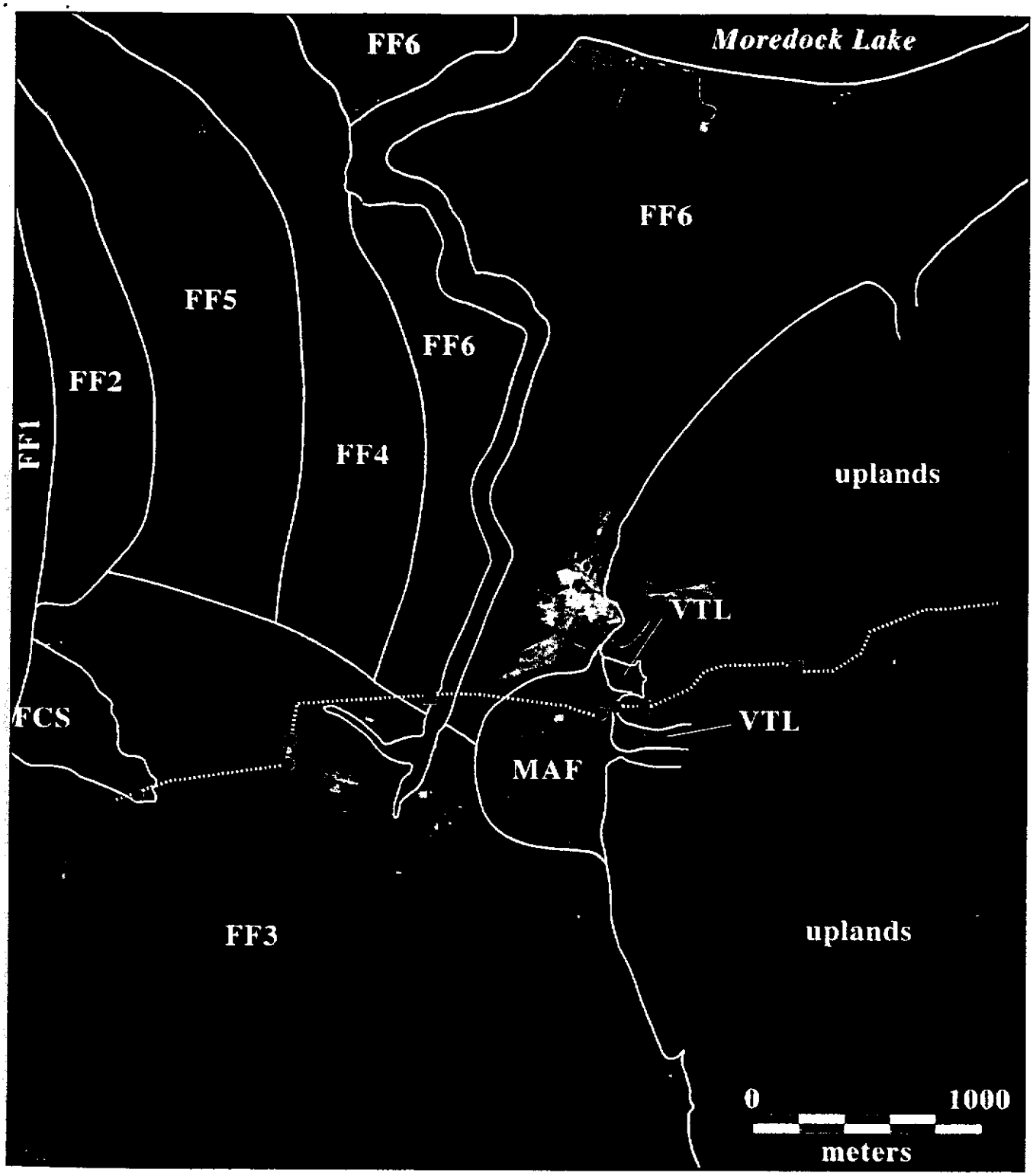
A John Deere backhoe equipped with a three-foot wide ditch bucket was used to excavate five backhoe trenches (Figures 1 and 2). Trenches were excavated to evaluate whether stratigraphy, depositional environments and inferred age of sediments indicated the potential to contain buried prehistoric cultural deposits. Trenches were placed adjacent to proposed transmission line pole locations in those landscape positions judged to have the greatest potential for buried prehistoric cultural deposits. Two of the trenches were located to test point bar ridges, and one to test a more level inter-ridge area, all belonging to the younger suite of point bar ridges and swales. The forth trench was placed on a colluvial foot slope on a narrow sliver of a Late Wisconsin terrace remnant. The fifth trench was placed on a low-angle alluvial fan deposited beyond the mouth of Dennis Hollow. Nearby cutbanks along the canalized creek emanating from Dennis Hollow were also examined and compared to this trench. Trench walls were scraped and examined, sedimentologically logged, and described using standard sediment and soil techniques and terminology (Schoenburger et al., 2002; Vepraskas, 1994). Trench descriptions appear in Appendix A.

Additional cursory observations were made of three hummocks along the proposed line that were identified as candidates for prehistoric mounds (Figures 1 and 2). One is situated in the Mississippi Valley. The other two are situated on local summits along the axis of a narrow upland drainage divide.

RESULTS

Geomorphology

The proposed power transmission line crosses roughly the east half of the Mississippi Valley before ascending into the uplands (Figure 2). The valley in the project vicinity is dominated by multiple distinct floodplain surfaces characterized by point bar ridge and swale topography



Holocene

Mississippi River floodplain (youngest to oldest)

FF1
FF2
FF3
FF4
FF5
FF6

FCS crevasse splay
MAF alluvial fan

Late Wisconsin

VTL loess-mantled terrace

transmission line route

observations of hummock questioned as a mound

trench location

Figure 2. Mississippi Valley geomorphology in the vicinity of the proposed power transmission line.

(Figure 2). Overbank crevasse splays, splay channels, and alluvial fans locally modify floodplain surfaces.

In the Mississippi Valley, roughly the western two-thirds of the transmission line obliquely crosses, from younger (west) to older (east), point bar ridges and swales of the FF3 surface (Figure 2). The FF3 surface truncates older high floodplain surfaces to the north. The western part of Valmeyer was built on older ridges of the FF3 surface. The pattern and orientation of the ridges and swales suggests they were left in the wake of the down-valley translation of large amplitude, large sinuosity paleomeanders of the Mississippi River.

The FF3 surface is cross-cut by, and therefore older than, the FF2 and FF1 surfaces (Figure 2). Both of these surfaces exhibit a smaller amplitude and sinuosity than the older point bar sets and belong to a younger paleochannel belt. When the Mississippi River was in the position of the FF1 surface, there was significant overbank flooding by large magnitude and / or high frequency floods as suggested by abundant crevasse splays and associated crevasse splay channels. One particularly large splay (mapped, FCS) extends eastward more than 0.5 km from the FF1 margin onto the FF3 floodplain (Other crevasse splays are present but not mapped). The transmission line ends in the vicinity of the eastern limit of one of the lobes of this splay.

From the crevasse splay on the FF3 floodplain, the line heads eastward and crosses from the FF3 surface to the oldest floodplain surface in the project vicinity, the FF6 floodplain (Figure 2). This surface is marked by point bar ridges and swales that are only faintly expressed and exhibit an orientation different from that of the FF3 floodplain. The FF6 floodplain has been greatly affected by crevasse splays and crevasse splay channels emanating from both the cutoff meander occupied by Moredock Lake and the FF4 paleochannel.

There is an irregular body of water that is confluent with Moredock Lake. The water body tapers somewhat southward, giving the appearance that it's source is Moredock Lake. One possible interpretation is that it is a large-scale crevasse channel that would have formed when the paleomeander occupied by Moredock Lake was the active Mississippi River channel. While this may indeed be the case, there is an alternative interpretation of the water body that similarly involves a large-scale crevasse channel interpretation. The water body abuts the FF4 floodplain, a former Mississippi River paleochannel. It seems equally likely that if the water body is indeed a crevasse channel, it could have emanated from the FF4 location. In this interpretation, the splay channel bifurcated, with one channel heading northeast into the paleochannel occupied by Moredock Lake, and one channel heading south. In either interpretation, it is likely that the original crevasse channel was truncated by Mississippi River channel activity that was responsible for the FF3 point bar complex. Immediately south of the north boundary of the FF3 floodplain, today the crevasse channel rapidly disseminates into multiple, non-extensive, distributary channels. It is likely that these distributaries are the result of large magnitude floods that post-date original splay channel development, including the 1993 flood, as well as formation of the FF3 floodplain. The southern reaches of the water body north of the FF3 north boundary are parallel, as through they could have been artificially shaped.

East of the likely large-scale crevasse splay channel, the proposed line crosses the low angle, ill-defined, alluvial fan deposited by the creek debouching from Dennis Hollow (Figure 2). The fan

apparently is deposited on both the FF6 and FF3 floodplains. Currently, the creek is ditched to flow north immediately after entering the Mississippi Valley. In the vicinity of the proposed line, the canalized creek angles to the west and is directed into the likely large-scale crevasse splay channel.

Along the proposed transmission line, between the alluvial fan and upland valley wall, lays a narrow sliver of a Late Wisconsin loess-mantled terrace (Figure 2). The terrace remnant is continuous with a more expansive terrace in the mouth of Dennis Hollow upon which the town cemetery is located. It also accords with a small terrace remnant on the north side of a smaller hollow mouth to the north.

Stratigraphy and Sedimentology

Trenches VLM-T1 and VLM-T2 were placed on the locally highest areas of ridges of the FF3 floodplain where ridges were crossed by the proposed transmission line to test the geologic potential of the FF3 sediment assemblage to harbor buried cultural deposits (Figures 1 and 2). Similarly, trench VLM-T3 was placed on a slightly lower inter-ridge level area that was still somewhat above associated swales. Trench VLM-T1 was slightly higher than other ridges because of the presence of the crevasse splay. Sediments of the distal crevasse splay consist of very fine sand and are about 0.6 m thick (Figure 3). The soil exhibits an Ap – C1 – C2 profile and is very weakly expressed. The crevasse splay sediment assemblage abruptly overlies the FF3 sediment assemblage. A thin silt loam bed overlies at least 2.2 m of loamy very fine sand and very fine sand, with one interval of laminated silt loam. This sequence represents upper point bar deposits, with the silt accumulating either in local depressional areas or as waning flood deposits. The soil that modifies the FF3 sediment assemblage exhibits a weak A – Bg – Bw – CB – Cg profile. The soil has very dark gray and dark grayish brown to olive brown and light olive brown colors, many faint oxide depletions, weak subangular blocky structure, and a friable to very friable consistence. Overall, the profile is moderately drained, but the Bg horizon has slightly greater clay content and is slightly gleyed. No prehistoric cultural deposits were encountered in either the crevasse splay or FF3 sediment assemblages.

Trench VLM-T2 exhibits a similar sediment assemblage to that exposed in Trench VLM-T1, except the overlying crevasse splay sediment assemblage is lacking, although there is a thin surface increment of flood deposits that might be related, and the fine grained surface increment is somewhat thicker than in VLM-T1 (Figure 3). Beneath 0.22 m of heavy very fine sand and very fine sandy loam, 0.35 m of heavy silt loam overlies very fine sand that at the very top fines upward to very fine sandy loam. At the base of the trench was another interval of stratified silt loam. The shallowly buried point bar ridge soil exhibits an A – Btg – Bw – Cg profile. The soil has a black A horizon, very dark gray to dark grayish brown Btg horizons, and dark yellowish brown Bw horizon , and dark gray to grayish brown Cg horizons. It also has many oxide accumulations and common to many oxide concretions in the Btg horizons, subangular blocky and prismatic structure with common thin clay skins on ped faces, a friable to loose consistence. The soil is weakly to moderately expressed. Only the Bw horizon in the uppermost part of the very fine sand is moderately well drained. The upper part of the profile is somewhat less well

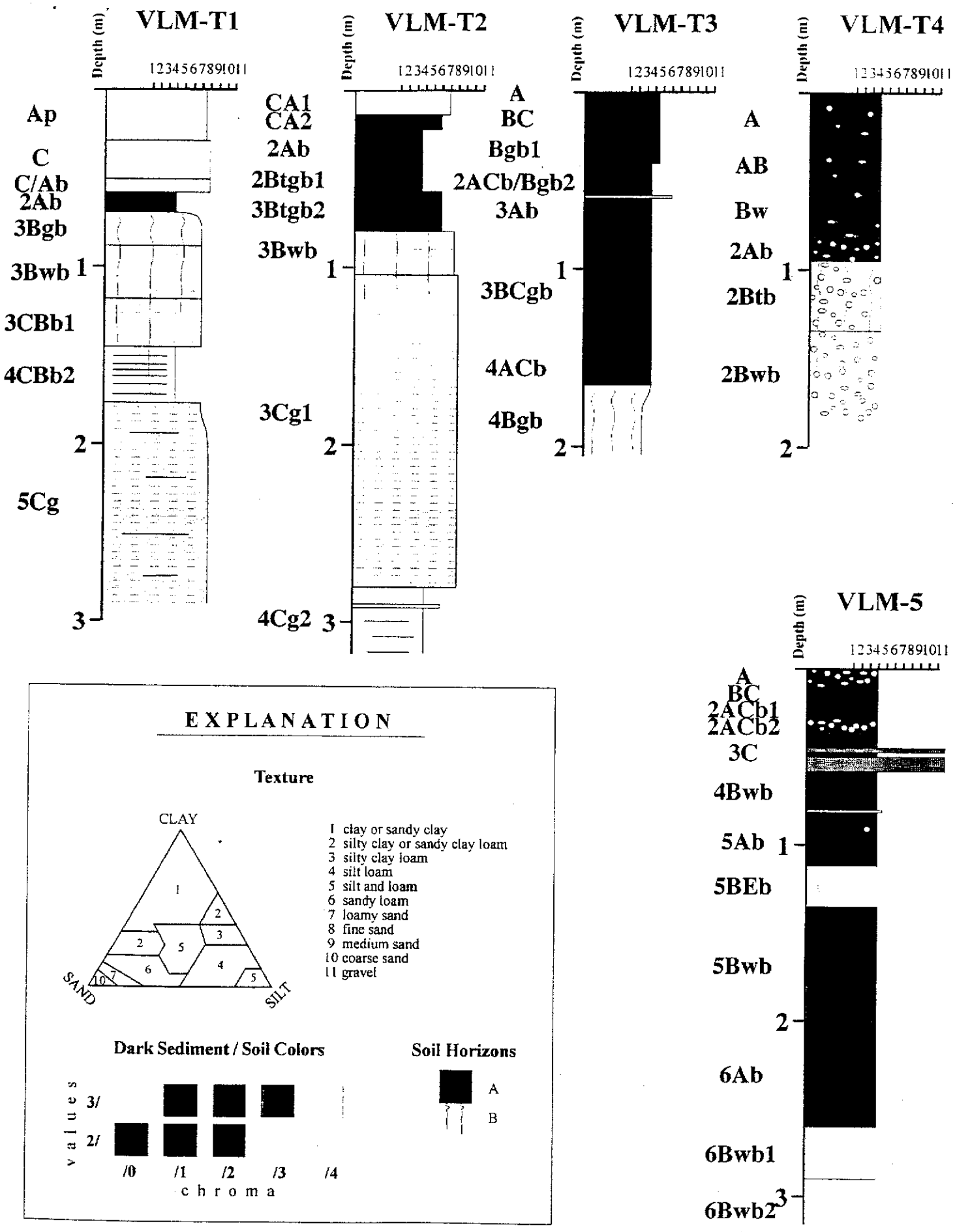


Figure 3. Sedimentology and stratigraphy of trenches.

drained as indicated by the gleyed Btg horizons. No prehistoric cultural deposits were encountered.

Trench VLM-T3, taken relatively close to VLM-T2 but at a slightly lower elevation, exhibits a contrasting sediment sequence that suggests accumulation in a nearly filled former swale. At least 1.6 m of heavy silt loam, silty clay loam and silty clay is overlain by a 0.4 m thick surface increment of heavy very fine sandy loam. Multiple buried soils are present, and all but the oldest of these, along with the surface soil, exhibit cumulic characteristics suggesting coeval sedimentation and soil upbuilding. The oldest buried soil has an AC – Bg profile. It has black to dark gray colors, many oxide accumulations in the Bg horizon, platy down to subangular blocky structure, and a friable to firm consistence. The soil is somewhat poorly drained. The overlying buried soil is welded onto the older buried soil. It is the thickest buried soil exposed, and except in its details is similar to the oldest buried soil. It exhibits an AC/Bg horizon reflecting soil welding of the overlying buried soil. This horizon is separated from an underlying thin A horizon by a basal thin bed of very fine sandy loam. A thick BCg horizon reflects alteration of thin beds. It has very dark gray to dark gray colors, many oxide accumulations, subangular blocky structure and a friable to firm consistence. This buried soil is also somewhat poorly drained. The upper 0.4 m is altered by a thin buried soil that exhibits a very dark gray to dark grayish brown Bg horizon. The surface soil exhibits an A – BC profile of very dark brown to very dark gray heavy very fine sandy loam. It is weakly to very weakly expressed. No prehistoric cultural deposits were encountered.

Trench VLM-T4 was situated on the narrow sliver of loess-mantled terrace between the bluff road and a descending upland spur (Figures 1 and 2). The entire terrace surface slopes towards the valley in this location, indicating the presence of a colluvial veneer. The trench was placed as far east as possible. Two colluvial sediment increments were exposed before encountering nearly a pavement of chert and limestone gravel. The basal gravel possibly suggests that in this location, the terrace is a strath terrace eroded onto bedrock. The older increment consists of about a meter of silt loam diamicton with common fine and medium chert pebbles and few limestone pebbles. The younger increment consists of silt loam, with only few fine chert pebbles. The older increment is altered by a buried soil that exhibits an A – Bt – Bw profile. It has very dark brown down to brown colors, subangular to prismatic structure with common very thin clay skins on ped faces in the Bt horizon, and a friable consistence. A few fine charcoal fragments were identified in the Bt horizon. The surface soil exhibits an A – AB – Bw profile. It has black to dark grayish brown colors, subangular blocky structure and a friable consistence. The buried soils are moderately expressed whereas the surface soil is only weakly developed.

Trench VLM-T5 was excavated in a yard on the alluvial fan near VLM-T4 and the canalized creek (Figures 1 and 2). A second trench was started between the VLM-T5 location and the creek on a bench that rose about a meter above the rest of the yard, but quickly encountered coarse fill including concrete slabs. Trench VLM-T5 exposed a substantially thick increment of young thin beds overlying two increments of silt loam, each interpreted as alluvial fan sediments altered by a buried soil (Figure 3). The lower buried soil exhibits an A – Bw profile that extended below the base of the trench. The upper buried soil exhibits an A – BE – Bw profile that is welded onto the lower buried soil. It has black to dark grayish brown colors, weak subangular blocky structure, and friable consistence. The upper 0.81 m of the sediment sequence

consists of multiple thin beds of silt loam diamicton, silt loam, and a few fine pebble gravel with a silt loam matrix representing multiple episodes of fan sedimentation and near at the top, fill, with little intervening time for soil formation. Historic artifacts were identified in this upper increment.

A relatively tall hummock rises above the FF6 surface in the northeast corner of a farm field on the north edge of town (Figures 1 and 2). The hummock is situated at the outlet of Marystown Creek from the likely large-scale crevasse channel. The hummock, as it now stands, is elongated parallel with ditched Marystown Creek. The south part of the hummock has been removed, and an old cut was gently scraped to reveal several meters of silt-dominated fill. In the narrow exposure, bedding appeared as gently to moderately dipping, thin to medium thick lenses and possibly beds. Some of the lenses consisted of sandy loam and loamy sand. No buried soils were identified. No prehistoric cultural deposits were seen in the hummock sediment assemblage, but there is a small amount of debris in the adjacent farm field. The surface soil is weakly to very weakly expressed, relatively thin, and exhibits an A – Bw profile.

In the uplands, the eastern hummock is relatively large and tall, and occurs along a narrow ridge. Other more subtle hummocks occur along the ridge, but this one is the tallest. The western side of the hummock has been excavated with heavy equipment and an extensive exposure is present. The hummock sediment assemblage consists of several meters of pedogenically altered silt loam. No stratification was evident. No prehistoric cultural material was observed in or around the hummock. The soil is well developed and has a thick sequence of Bt horizons. The western hummock in the uplands that was investigated is situated a little more than 0.1 km east of the Mississippi Valley. It is lower on the landscape than the other upland hummock and is quite small. The hummock is situated on the east side of a larger summit along the axis of the very narrow ridgeline. To the east lies a saddle with outcrops of limestone bedrock. An old pothunters pit is present on the southwest side of the hummock. Hand probes were taken across the hummock and in the floor of the potters pit. The hummock sediment assemblage consists of a light silt loam, not inconsistent with loess. The soil is very weakly expressed with a thin A – Bw profile and secondary carbonate concretions. No internal structure was identified, and no prehistoric cultural debris was identified in probes, on the hummock surface, or in spoil from the potters pit.

DISCUSSION

The FF3 sediment assemblage is composed primarily of upper point bar sand deposited during activity of the large sinuosity, large amplitude Mississippi River paleochannel belt. Prehistoric cultural deposits are common on ridged surfaces of this paleochannel belt in the American Bottom (cf. Bereis and Porter, 1984). Trenches on this particular part of the paleomeander belt (FF3 surface) indicate active point bar accretion without significant hiatus until the soil developed in the point bar sequence. This suggests that prehistoric cultural material is most likely to be associated with the top of the point bar sequence, with the potential decreasing rapidly with depth. Once off the point bar ridges, the sediment sequence consists of finer material that probably accumulated in swales after the point bar ridges formed. They are more poorly drained landscape positions, and have only the lowest potential of containing buried

cultural deposits. However, if the fine material for the most part post-dates the ridges, it laps onto the lower flanks of the ridges, thus potentially burying any associated prehistoric cultural deposits on the lower point bar ridge flanks.

In the American Bottoms, rapid westward migration and abandonment of the large sinuosity, large magnitude paleochannel belt in favor of a younger paleomeander belt with a smaller sinuosity and smaller amplitude meanders occurred by about 2400 B.P. at the latest (Hajic, 1983). Thus, prehistoric cultural deposits as old as Late Archaic could be associated with the point bar ridge surfaces and uppermost few decimeters.

The actual point bar ridge surface is shallowly buried along the proposed transmission line, at least in the vicinity of Trenches VLM-T1, -T2 and –T3. In the case of the former two trenches, distal crevasse splay and related deposits bury the point bar surface. The paucity of pedogenic alteration suggests this material could date to the 1993 floods that inundated this part of the American Bottom. Thus, the prehistoric surface is shallowly buried. Although the upper 1.5 m in VLM-T3 are pedogenically altered, they likely post-date point bar development. Although lower increments are probably prehistoric in age, the uppermost may date to historic times.

Colluvial slopes and alluvial fans composed primarily of redeposited loess in the central Mississippi Valley and Illinois Valley region were highly suitable landscape positions for prehistoric occupation; sites on and within these landform sediment assemblages are common. Alluvial fans and colluvial slopes are well drained, intermediate in position between upland and valley resources, and have soils well suited to farming. These factors, combined with sheetflood depositional processes, result in common occurrences of buried prehistoric cultural deposits with relatively good integrity in certain parts of alluvial fans (Hajic, 1990). The base of the Dennis Hollow creek alluvial fan must be younger than the surface upon which it is deposited, so the alluvial fan crossed by the proposed transmission line is late Holocene in age. Late Holocene sedimentation rates on alluvial fans in west-central Illinois were considerably less than during the middle Holocene, and exhibit multiple, stacked paleosols (Hajic, 1990). At least two such paleosols are represented in VLM-T5. In the position of the transmission line, at least parts of the prehistoric fan surface are buried by historic fan deposits beneath several thin increments of gravely fill. Thus, any prehistoric material will be buried. In this fan, if prehistoric cultural deposits were associated with the youngest buried soil, they would likely be Late Woodland or younger in age. If prehistoric cultural deposits were associated with the older buried soil, they would likely be Middle Woodland or Late Archaic in age.

Results of observations of the hummock on the FFC3 surface are inconclusive and additional investigation and historic research would be required to determine whether the hummock is prehistoric in age and thus a mound. The sides of the hummock are relatively steep, so the fact that the soil on the summit is weakly to very weakly expressed is not necessarily related to the age of the hummock. In terms of bedding characteristics, some of the lenses seemed smaller than might be expected with a backhoe bucket or end loader (although the full geometry of the lenses could not be observed). On the other hand, the lenses appeared to be lengthier and not as high as some classic basket loading seen in some mound fills. The position of the hummock at the outlet of Marystown Creek could be suspect. It is possible that the hummock represents material scooped from the ditch, or from the adjacent crevasse channel.

For the eastern hummock in the uplands, the strong development of the soil is more consistent with well-drained upland soils that have developed in the loess since the end of the Wisconsin than with a prehistoric mound that would exhibit a more weakly expressed soil with some internal mound structure. Most likely this hummock represents a natural rise formed by a combination of loess sedimentation and erosional hill slope processes. For the much smaller western hummock, the soil is consistent with entisols that form in eroded or eroding loess, and not with a mound with internal structure. The cursory observations suggest that these two upland hummocks are not mounds.

CONCLUSIONS

1. In the Mississippi Valley, the proposed transmission line crosses two floodplain surfaces consisting of concordant point bar ridge and swale topography. Distal parts of a crevasse splay shallowly bury part of the younger floodplain surface. A low-angle alluvial fan deposited by Dennis Hollow creek buries the contact between the older and younger floodplain surfaces on the east side of the valley. The point bars are part of a Mississippi River paleomeander belt that was abandoned by about 2400 B.P. The alluvial fan is late Holocene in age. The crevasse splay, or reactivation of the splay, is likely modern. A colluvial slope tops a narrow sliver of Late Wisconsin terrace (probably strath terrace) along the east valley wall.

2. The floodplain sediment assemblage consists of very fine sand underlying point bar ridges and finer textured material between ridges. It is judged that there is a low potential for geologically buried cultural material in the very fine sand below the uppermost soil horizon(s). However, distal crevasse splay deposits and alluvial fan deposits bury even parts of the ridges of the floodplain sediment assemblage, and any associated prehistoric cultural deposits. Between the ridges, uppermost sediment increments are younger than point bar ridges, perhaps even historic in age, and may lap up on the sides of the ridges, possibly burying cultural deposits. Interridge soils are not very well drained, and have a very low potential for harboring prehistoric cultural deposits.

3. The prehistoric part of the alluvial fan sediment assemblage has a high geologic potential for buried prehistoric cultural deposits to depths greater than 3.15 m. At least two prehistoric buried soils are represented and are traceable in nearby cutbanks along canalized Dennis Hollow creek. The fan area tested has about 0.8 m of historic fan deposits and fill, so that any associated prehistoric cultural deposits will be buried. No prehistoric cultural deposits were observed in the trench that sampled the fan, or in nearby cutbanks.

4. The colluvial slope sediment assemblage on the Late Wisconsin terrace exhibits one buried soil with associated charcoal, and has a great geologic potential to yield buried prehistoric cultural deposits to depths of about 1.85 m. However, no buried prehistoric cultural deposits were observed.

5. Three hummocks occur along the proposed transmission line. The two that occur on a narrow ridge summit in the uplands are almost certainly not prehistoric mounds. The one that

occurs on the floodplain is clearly man-made, but it could not be concluded whether the mound is prehistoric or historic in age based on the cursory observations.

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APPENDIX A
TRENCH DESCRIPTIONS

Trench: VLM-T1
Landscape Position: crevasse splay on point bar ridge of large sinuosity, large amplitude paleomeander

Depth (m)	Horizon	Description
0.00 - 0.28	Ap	very dark grayish brown (10YR 3/2) very fine sand, with some silt; weak medium parting to fine subangular blocky; very friable; noneffervescent; abrupt boundary.
0.28 - 0.51	C	olive brown (2.5Y 4/3) very fine sand; many fine faint dark grayish brown (2.5Y 4/2) oxide depletions; very weak medium subangular blocky; very friable; noneffervescent; abrupt, very irregular, boundary.
0.51 - 0.58	C/Ab	olive brown (2.5Y 4/3) and very dark gray to very dark grayish brown (10YR 3.5/1) very fine sand; very weak medium subangular blocky; very friable; noneffervescent; heavily bioturbated; abrupt boundary.
0.58 - 0.69	2Ab	very dark gray to very dark grayish brown (10YR 3.5/1) silt loam; many thin continuous strong brown (7.5YR 3/4) Fe stains lining pores; weak fine subangular blocky; friable; noneffervescent; clear boundary.
0.69 - 0.89	3Bgb	dark grayish brown (2.5Y 4/2) heavy very fine sandy loam; many thin continuous strong brown (7.5YR 3/4) Fe stains lining pores; weak to moderate medium parting to fine subangular blocky; very few very thin discontinuous very dark gray to very dark grayish brown (2.5Y 3/1.5) clay films on medium ped faces; friable; noneffervescent; clear to gradual boundary.
0.89 - 1.18	3Bwb	olive brown to dark yellowish brown (2.5Y – 10YR 4/3.5) loamy very fine sand; many fine faint light olive (2.5Y 5/3) oxide depletions; weak coarse parting to medium subangular blocky; very few very thin discontinuous very dark gray to very dark grayish brown (2.5Y 3/1.5) clay films on coarse ped faces; very friable; noneffervescent; gradual boundary.
1.18 - 1.45	3CBb1	olive brown to light olive (2.5Y 4.5/4) loamy very fine sand; many fine and medium light olive (2.5Y 5/3) oxide depletions; very weak very coarse subangular blocky; very friable; noneffervescent; abrupt boundary.
1.45 - 1.77	4CBb2	light olive (2.5Y 5/3) and olive brown (2.5Y 4/3) silt loam, with some very fine sand; many very fine and fine distinct dark yellowish brown (10YR 3/4) Fe accumulations and many fine distinct grayish brown (2.5Y 5/2) oxide depletions; few fine oxide concretions at top; thin to thick laminae, weakly to moderately expressed; friable; strongly effervescent, with common very fine and fine carbonate filaments and concretions; few very fine and fine pores; abrupt boundary.
1.77- >2.90	5Cgv	very dark to dark grayish brown (2.5Y 3.5/2) very fine sand, with some silt; many medium and coarse (2.5Y 5/2) oxide depletions and (10YR 3/2) oxide accumulations; loose, single grain; noneffervescent; base of trench.

notes:

Trench: VLM-T2
Landscape Position: point bar ridge of large sinuosity, large amplitude paleomeander

Depth (m)	Horizon	Description
0.00 - 0.13	CA1	very dark grayish brown (2.5Y 3/2) down to very dark gray to dark grayish brown (2.5Y 3.5/1.5) loamy very fine sand; common fine distinct tending to vertical dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 3/6) oxide accumulations; very weak fine subangular blocky; friable; noneffervescent; abrupt boundary.
0.13 - 0.22	CA2	very dark gray to very dark grayish brown (10YR 3.5/1) very fine sandy loam; very weak fine subangular blocky; very friable; noneffervescent; abrupt boundary.
0.22 - 0.43	2Ab	black (10YR 2/1) heavy silt loam; many fine faint very dark grayish brown (10YR 3/2) oxide accumulations; moderate fine angular blocky and subangular blocky parting to granular; friable; noneffervescent; clear boundary.
0.43 - 0.57	2Btgb1	very dark gray to dark grayish brown (10YR 3.5/1.5) heavy silt loam, with bioturbated pore fills of very fine and fine sand; many fine faint very dark grayish brown (10YR 3/2) oxide accumulations; common fine dark yellowish brown (10YR 3/4) oxide accumulations; common fine oxide concretions; weak to moderate medium subangular blocky; common thin very dark gray to very dark grayish brown (10YR 3.5/1) clay skins on ped faces; friable; noneffervescent; clear boundary.
0.57 - 0.79	3Btgb2	very dark to dark grayish brown (10YR 3.5/2) very fine sandy loam; many fine distinct dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 3/6) oxide accumulations; many fine oxide concretions; moderate coarse prismatic parting to medium subangular blocky; common thin very dark gray to very dark grayish brown (10YR 3.5/1) clay skins on ped faces; friable; noneffervescent; clear boundary.
0.79 - 1.03	3Bwb	dark yellowish brown (10YR 4/3.5) very fine sand, with little silt; many medium grayish brown (2.5Y 5/2) oxide depletions; weak coarse subangular blocky; very friable; noneffervescent; gradual boundary.
1.03 - 2.80	3Cg1	grayish brown (2.5Y 5/2) very fine sand; many medium and coarse distinct dark yellowish brown (10YR 4/4) and dark yellowish brown (10YR 4/5) oxide accumulations; very weak very coarse subangular blocky; friable to loose, single grain; noneffervescent; abrupt boundary.
2.80 ->3.20	4Cg2	dark gray to grayish brown (2.5Y 4.5/1.5) silt loam and clay, with few clay and very fine sandy loam laminae; thin laminae to thin beds, weakly to moderately expressed; friable; strongly to violently effervescent, with many fine carbonate concretions and pores linings; base of core.

notes:

Trench: VLM-T3
Landscape Position: point bar inter-ridge level area of large sinuosity, large amplitude paleomeander

Depth (m)	Horizon	Description
0.00 - 0.05	A	very dark brown (10YR 2/2) heavy very fine sandy loam; weak granular; friable; noneffervescent; clear boundary.
0.05 - 0.25	BC	very dark gray (2.5Y 3/1) heavy very fine sandy loam; very weak medium subangular blocky over thin beds, very weakly expressed; friable; noneffervescent; clear boundary.
0.25 - 0.40	Bgb1	very dark gray to dark grayish brown (2.5Y 3.5/1.5) heavy very fine sandy loam, with more clay than above; many fine oxide concretions; weak medium parting to fine subangular blocky; friable; noneffervescent; few coarse biopores; abrupt boundary.
0.40 - 0.60	2ACb/Bgb2	black to very dark gray (10YR 2.5/1) to black to very dark brown (10YR 2/1.5) heavy silt loam, with basal thin bed of olive brown to light olive brown (2.5Y 4.5/3) very fine sandy loam; very weak subangular blocky; friable; noneffervescent; abrupt boundary.
0.60 - 0.74	3Ab	very dark gray (10YR 3/1) light silty clay loam; many fine faint very dark grayish brown (10YR 3/2) oxide accumulations; weak medium parting to fine subangular blocky; firm to friable; noneffervescent; clear boundary.
0.74 - 1.49	3BCgb	very dark to dark gray (2.5Y 3.5/1) light silty clay loam; many fine distinct dark yellowish brown (10YR 3/6) oxide accumulations; many fine oxide concretions; weak coarse subangular blocky over thin beds, weakly expressed; friable to firm; noneffervescent; clear to abrupt boundary.
1.49 - 1.65	4ACb	black (2.5Y 2.5/1) light silty clay loam; weak fine subangular blocky over very weak coarse platy; friable to firm; noneffervescent; one small bone fragment; clear boundary.
1.65 ->2.03	4Bgb	dark gray (2.5Y 4/1) heavy silty clay loam down to silty clay, with few silt loam laminae; many fine dark yellowish brown (10YR 3/4) oxide accumulations; weak coarse subangular blocky; firm; noneffervescent; base of core.

notes:

Trench: VLM-T4
Landscape Position: colluvial foot slope deposited on late Wisconsin terrace

Depth (m)	Horizon	Description
0.00 - 0.30	A	black (10YR 2/1) silt loam, with few fine pebble gravels of chert; weak granular; very friable noneffervescent to strongly effervescent; clear boundary.
0.30 - 0.53	AB	very dark grayish brown (10YR 3/2) silt loam, with few fine pebble gravels of chert; weak fine subangular blocky parting to crumb; very friable; noneffervescent; clear boundary.
0.53 - 0.82	Bw	very dark to dark grayish brown (10YR 3.5/2) silt loam, with few fine chert pebble gravel; weak medium parting to fine subangular blocky; friable; noneffervescent; clear boundary.
0.82 - 0.95	2Ab	very dark brown (10YR 2/2) silt loam diamicton, with common fine chert pebbles and few fine limestone pebbles; moderate medium parting to weak fine subangular blocky; friable; noneffervescent; clear to abrupt boundary.
0.95 - 1.33	2Btb	dark brown (10YR 3.5/3) silt loam diamicton, with common fine and medium chert pebbles and few fine and medium limestone pebbles; weak to moderate coarse parting to medium prismatic; common very thin continuous very dark grayish brown (10YR 3/2) clay skins on ped faces; friable; noneffervescent; few fine charcoal fragments; gradual boundary.
1.33 - 1.85	2Bwb	dark brown to brown (10YR 4/3) silt loam diamicton, with common fine and medium chert pebbles and few fine and medium limestone pebbles; moderate coarse subangular blocky; friable; noneffervescent; strongly bioturbated; base of trench on silt loam diamicton with many fine and medium chert pebbles.

notes:

Trench: VLM-T5
Landscape Position: historic fill over alluvial fan

Depth (m)	Horizon	Description
0.00 - 0.10	A	very dark brown (10YR 2/2) silt loam diamicton, with many fine pebbles; weak fine subangular blocky and granular; friable; noneffervescent; abrupt boundary.
0.10 - 0.17	BC	very dark to dark grayish brown (10YR 3.5/2) and brown (10YR 5/3) silt loam, with common bioturbated light silt laminae and few fine pebbles; moderate medium platy; friable; noneffervescent; abrupt boundary.
0.17 - 0.30	2ACb1	very dark gray to very dark grayish brown (10YR 3.5/1) silt loam and silt loam diamicton, with few fine pebbles; very weak fine subangular blocky; friable; noneffervescent; clear boundary.
0.30 - 0.36	2ACb2	very dark gray to very dark grayish brown (10YR 3.5/1) and very dark grayish brown (10YR 3/2) silt loam and silt loam diamicton, with few to common fine pebbles; very weak fine subangular blocky over thin beds, very weakly expressed; friable; noneffervescent; abrupt boundary.
0.36 - 0.58	3C	black to very dark brown (10YR 2.5/1) and very dark to dark grayish brown (10YR 3.5/2) silt loam and fine pebble gravel with a silt loam matrix and many cinders and clinkers; thin beds, moderately expressed; friable; noneffervescent; very abrupt boundary.
0.58 - 0.81	4Bwb	very dark grayish brown (10YR 3/2) silt loam; weak medium subangular blocky; friable; noneffervescent; abrupt boundary marked by a thin bed of light silt loam.
0.81 - 1.12	5Ab	black to very dark grayish brown (10YR 2.5/1.5) silt loam, with very few fine weathered limestone fragments; weak fine subangular blocky; friable; noneffervescent; clear boundary.
1.12 - 1.35	5BEb	dark grayish brown (10YR 4/2) silt loam; many fine faint very dark to dark grayish brown (10YR 3.5/2) and distinct dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 3/6) oxide accumulations; weak medium subangular blocky; friable; noneffervescent; gradual boundary.
1.35 - 2.01	5Bwb	very dark to dark grayish brown (10YR 3.5/2) silt loam; many fine faint dark grayish brown (2.5Y – 10YR 4/2) oxide depletions; few fine faint dark yellowish brown (10YR 3/4) oxide accumulations; weak coarse subangular blocky; friable; noneffervescent; clear boundary.
2.01 - 2.60	6Ab	silt loam, not described.
2.60 - 2.90	6Bwb1	silt loam, not described.
2.90 ->3.15	6Bwb2	silt loam, not described.

notes: Buried soil represented by 5Ab – 5Beb – 5Bwb is present and continuous in the ditch that carries Dennis Hollow Creek.